

DETAILED ACTION

Examiner Notes

1. The examiner notes that the restriction requirement dated 11/23/10 improperly failed to apply the "unity of invention" standard which is necessary for restriction of applications filed under 35 USC 371(c). A corrected requirement for restriction is provided below having the same groupings of claims and requirement for an election of species in the restriction dated 11/23/10. Applicant's representative, Mr. Ferrell indicated in a telephone conversation on 12/13/10 that applicant still elects claims 1-28, 50-70 and 78 with traverse for prosecution as indicated in the response to the previous restriction requirement dated 12/1/10. Any arguments applicant wishes to present in the response to this office action to traverse the requirement for restriction presented below will be considered in the following office action.

Election/Restrictions

2. Restriction is required under 35 U.S.C. 121 and 372.
3. This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

4. In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-28, 50-70 and 78, drawn to a film.

Group II, claim(s) 29-41 and 75-77, drawn to a blister packaging.

Group III, claim(s) 42-49, 71-74 and 79, drawn to a method of making a film.

5. The groups of inventions listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Groups I, II and III share the special technical feature of a film comprising a cyclic olefin polymer layer sandwiched between two styrene butadiene polymer layers. Saavedra et al. WO 2004/024433, U.S. Patent Application Publication No. 2006/0057410 (hereafter referred to as Saavedra) teaches a film comprising a core layer comprising cyclic olefin copolymer and two outer skin layers comprising styrene-butadiene copolymer (Para. 8-9). Therefore, the special technical feature shared between groups I-III was known and does not provide a contribution over the prior art. As such, there is no unity of invention for groups I-III.

6. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

7. The species are as follows:

8. For group I: Structures A-H claimed in claim 12, A-F and H of which correspond to structures I-VII in claims 52 and 78; and norbornene.
9. Upon election of one of structures A-H claimed in claim 12, A-F and H of which correspond to structures I-VII in claims 52 and 78 applicant is required to further identify the elected species by selection of the R groups in the elected structure from the group consisting of an C₆-C₂₀ aryl group, an C₁-C₂₀ alkyl group, a halogen or a hydrogen recited in claim 79.
10. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise require all the limitations of an allowed generic claim. Currently, the following claim(s) are generic: 1-10, 12-17, 21-28, 50-53, 55, 59-70 and 78.
11. During a telephone conversation with Mr. Ferrell on 12/13/10 a provisional election was made with traverse to prosecute the invention of group I, claims 1-28, 50-70 and 78 and the species corresponding to structure I of claim 52 wherein I is norbornene. Affirmation of this election must be made by applicant in replying to this Office action. Claims 29-49, 71-77 and 79 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.
12. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 8 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

15. Claim 8 recites "wherein the second intermediate layer is the same as said intermediate layer". It is unclear what feature of the second intermediate layer is the same as for the intermediate layer. Does the second intermediate layer have the same thickness? Composition? Clarity? The examiner believes applicant intended to recite that the second intermediate layer is the same composition as the intermediate layer claimed and claim 8 will be interpreted as such for the purpose of examination.

Appropriate correction is required.

16. Claim 22 recites "wherein said film has a peel strength of greater than 1.0 lbsf/in". This recitation fails to recite what the film is being peeled *from*. Without knowledge of what the film is being peeled from it is impossible to determine the peel strength. The examiner believes applicant intended to recite the interlayer peel strength between the layers of the laminate and claim 22 will be interpreted as such for the purpose of examination. Appropriate correction is required.

Claim Rejections - 35 USC § 102

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

18. Claims 1-15, 18-21, 23-25, 50-63, 65-67, 70 and 78 are rejected under 35 U.S.C. 102(b) as being anticipated by Saavedra et al. WO 2004/024433, U.S. Patent Application Publication No. 2006/0057410 (hereafter referred to as Saavedra) and evidentiary references "Butadiene" Sun, H. N. and Wristers, J. P. 2002. Butadiene. Kirk-Othmer Encyclopedia of Chemical Technology. (hereafter referred to as Sun) , Matweb data sheet for Chevron Phillips K-resin® DK11 Styrene Butadiene copolymer and Wolf et al. U.S. Patent No. 6,406,763.

19. Saavedra teaches a multilayer film comprising at least three layers: an inner layer between two skin layers. (Para. 11) The inner layer may comprise cyclic-olefin copolymer. (Para. 11) The skin layers may comprise styrene-butadiene copolymer. (Para. 11) One or two intermediate layers may be disposed between the skin layers and the inner layer. (Para. 27) The intermediate layers may be the same resins or different. (Para. 27)

20. The cyclic olefin copolymer(COC) recited are amorphous, glass-clear copolymers of ethylene and norbornene which provide good stiffness and high clarity such as

Topas® COC copolymers. (Para. 24) Topas ® 8007 is disclosed to be useful. (Para. 40)

21. The styrene-butadiene copolymers (SBC) disclosed are clear resins known in the art. (Para. 23) The SBC resin provides both high clarity and good film stiffness. (Para. 23) Useful SBC are disclosed to include DK11 and DK13 available from Chevron-Phillips. (Para. 40)

22. Saavedra discloses that film clarity is highly influenced by the skin layers and that for higher clarity embodiments of the inventive film the skin layers preferably comprise SBC or COC. (Para. 30). For retail, high clarity films of the inventive film preferably have a haze value of less than 5% as measured by ASTM D-1003. (Para. 33)

23. The films disclosed may be made by coextrusion. (Para. 36) Layer ratios of the three layer embodiment are disclosed to include 15:70:15. (Para. 41)

24. Regarding claims 1, 50 and 78: Saavedra discloses a multilayer film comprising a COC layer melt bonded (coextruded) directly to two outer skin (outermost) layers comprising SBC wherein the COC is a copolymer of ethylene and norbornene as claimed in claims 1, 50 and 78. The SBC skin layers disclosed by Saavedra are interpreted to be "substantially free of cyclic olefin" as claimed in claim 1 since they are not disclosed to be comprised of cyclic olefin. Likewise, the COC inner layer of Saavedra is interpreted to be "substantially free of styrene butadiene copolymer" as claimed in claim 1 since it is not disclosed to further comprise SBC. Therefore, Saavedra anticipates all of the limitations of claims 1, 50 and 78.

25. Regarding claim 2: Saavedra does not disclose that halogens are present in the film recited and therefore the film of Saavedra is interpreted to be "substantially free of halogens as claimed in claim 2.

26. Regarding claims 3-6: Saavedra discloses coextrusion of the three layers of the film and therefore the SBC skin layers are extruded simultaneously and in contact with the COC inner layer as claimed in claims 3-6.

27. Regarding claims 7-9: Saavedra discloses that additional intermediate layers comprising the same resin may be present between the skin layers and the inner layer as claimed in claims 7-9.

28. Regarding claim 10: Saavedra is silent regarding whether the styrene butadiene copolymer disclosed "comprises the reaction product of: a styrene monomer and 1,3-butadiene" as claimed in claim 10. However, the examiner takes official notice that it was universally known in the polymer arts that the disclosure of styrene butadiene copolymer means a copolymer that comprises the reaction products of a styrene monomer and 1,3-butadiene as evidenced by "Butadiene" Sun, H. N. and Wristers, J. P. 2002. Butadiene. Kirk-Othmer Encyclopedia of Chemical Technology. (hereafter referred to as Sun) Sun teaches "Butadiene exists in two isomeric forms: 1,3-butadiene and 1,2-butadiene" and that "1,2-butadiene, a small by-product in 1,3-butadiene production, has no significant current commercial interests" (Pg. 1) As such, one of ordinary skill in the art would have immediately envisaged that a generic recitation of butadiene would mean 1,3-butadiene since the only other form butadiene exists in has

no commercial interests. Therefore, the SBC of Saavedra comprises styrene and 1,3-butadiene monomers and anticipates the limitations of claim 10.

29. Regarding claims 11-15 and 18-20: The COC of Saavedra comprising ethylene and norbornene anticipates the limitations of claims 11-15 and 18-20.

30. Regarding claim 21: Saavedra discloses that Topas® 8007, the COC resin useful for the invention has a density of 1.020 g/cm^3 . (Para. 40) Matweb data for DK11 styrene-butadiene copolymer which is disclosed by Saavedra to be a useful SBC for the invention teaches that the density of DK11 is 1.01 g/cm^3 . (Matweb data sheet)

Therefore, a three layer film having skin layers of DK 11 SBC and a core layer of Topas® 8007 COC resin would have to have a density between 1.01 and 1.02 g/cm^3 . This density anticipates points within the range claimed in claim 21.

31. Regarding claims 23: The film of Saavedra is made of the same materials as disclosed by applicant and it therefore naturally flows that it would display the same characteristics of WVTR claimed in claim 23.

32. Regarding claims 24 and 25: Saavedra discloses that the film of the invention has a haze of less than 5% which anticipates a point within the range claimed in claim 25. The film of Saavedra has very low haze, is disclosed to have high clarity and is comprised of the same materials as the film claimed by applicant. Therefore, it naturally flows that the film of Saavedra would display a light transmission value as claimed in claim 24.

33. Regarding claim 51: Saavedra does not disclose that the COC core layer recited comprises any further resins and therefore it is interpreted to "consist essentially of COC" as claimed in claim 51.

34. Regarding claims 52-56: The COC comprising ethylene and norbornene disclosed by Saavedra anticipates the limitations of claims 52-56.

35. Regarding claims 57 and 58: Saavedra discloses that Topas® 8007 is a useful COC for the invention. Applicant's specification discloses that Topas® 8007 is a useful COC for the instantly claimed invention and that this resin contains 36 mol% norbornene with the balance being ethylene. (Pg. 34, lines 28-29) Therefore, the Topas® 8007 COC resin disclosed by Saavedra anticipates the limitations of claims 57 and 58.

36. Regarding claims 59, 61 and 62: Wolf et al. U.S. Patent No. 6,406,763 discloses that the SBC DK11 contains about 75 wt% styrene monomer and 25 wt% butadiene monomer. (Col. 14, lines 45-49) Therefore, a laminate comprising SBC DK11 as the skin layers as disclosed by Saavedra anticipates the limitations of claims 59, 61 and 62.

37. Regarding claim 60: Saavedra does not disclose that the SBC recited comprises and further monomers and therefore the SBC of Saavedra is interpreted to consist of styrene and butadiene residues as claimed in claim 60.

38. Regarding claim 63: Saavedra discloses that each skin layer comprises 15% of the total laminate thickness. Therefore, the core layer is 4.6 times thicker than the skin layer which anticipates the limitations of claim 63.

39. Regarding claims 65-67: Saavedra anticipates the three layer embodiment and the coextruded embodiment claimed in claims 65 and 66. The recitation of "lamination" in claim 67 is given little patentable weight and it interpreted to read on coextrusion. Even if the term "lamination" were interpreted to imply that the layers of the laminate were formed separately and then melt bonded together, this limitation would merely be a product by process limitation that fails to provide any structural features which would render the invention claimed materially distinguishable from that disclosed in the prior art. Saavedra therefore anticipates the limitations of claim 67.

40. Regarding claim 70: The film of Saavedra is disclosed to have low haze, the SBC and COC disclosed to make the film of Saavedra are disclosed to be particularly advantageous for films requiring high clarity and the materials disclosed by Saavedra are the same as those claimed by applicant. Therefore, it naturally flows that the film of Saavedra would inherently exhibit a correlated haze as claimed in claim 70 when produced at a thickness as recited in claim 70.

Claim Rejections - 35 USC § 103

41. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

42. Claims 22, 26-28, 64, 68 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saavedra et al. WO 2004/024433, U.S. Patent Application Publication No. 2006/0057410 (hereafter referred to as Saavedra) as applied to claims 1 and 50 above.

43. Saavedra teaches what has been recited above but is silent regarding the peel strength between the layers recited and the thickness of the layers of the film.

44. Regarding claims 22, 68 and 69: It would have been obvious to one having ordinary skill in the art at the time the invention was made who desired to prevent peeling of the layers of the laminate disclosed by Saavedra from one another to have disposed an adhesive material between the layers disclosed. It is universally known in the laminate arts to employ polymeric adhesives to increase the bond strength between laminate layers. The use of a universally known technique to increase the adhesion of polymeric layers would have produced the invention as claimed in claims 21, 68 and 69.

45. Regarding claims 26-28 and 64: Saavedra is silent regarding the thickness of the layers of the film disclosed. However, it has long been an axiom of United States patent law that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); *In re Boesch*, 617 F.2d 272, 276 (CCPA 1980) ("[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art."); *In re Aller*, 220 F.2d

454, 456 (CCPA 1955) ("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."). "Only if the 'results of optimizing a variable' are 'unexpectedly good' can a patent be obtained for the claimed critical range." *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (quoting *In re Antonie*, 559 F.2d 618, 620 (CCPA 1977)).

46. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the layers of the laminate disclosed by Saavedra whatever thickness was desired depending on the application the film was intended to be used for. Obviously, thicker layers are going to be tougher. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized the layer thicknesses of the layers disclosed. This obvious optimization of the thickness of the layers would have produced the same invention as claimed in claims 26-28 and 64.

47. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saavedra et al. WO 2004/024433, U.S. Patent Application Publication No. 2006/0057410 (hereafter referred to as Saavedra) as applied to claims 1 and 50 above in further view of "Radiation Curing" McGinniss, V. D. 2000. Radiation Curing. Kirk-Othmer Encyclopedia of Chemical Technology (hereafter referred to as McGinniss).

48. Saavedra teaches what has been recited above but is silent regarding the COC layer comprising a cross-linker.

49. McGinniss teaches that cross-linked polymer has higher melting points, improved heat resistance and improved chemical resistance than the original thermoplastic polymer. (Pg. 1) Cross-linking of polymeric materials can be facilitated by the use of cross-linking agents such as alkenes. (Pg. 5)

50. McGinniss evidences that it was universally known in the art at the time the invention was made that cross-linking polymeric materials provided improved properties and that cross-linking can be accomplished by the use of cross linking agents such as alkenes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included an alkene cross linking agent in the COC layer of Saavedra in order to increase the melting point, improve the heat resistance and improve the chemical resistance of the film disclosed. This obvious use of a technique well known in the art would have produced the invention claimed in claims 16 and 17.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE JACOBSON whose telephone number is (571)272-8905. The examiner can normally be reached on Monday-Thursday 8:30 AM-7 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571)272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michele L. Jacobson/
Examiner, Art Unit 1782

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